Louisiana Delta Community College
Expanded Course Syllabus.Physics 220

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Office Hours 1:00 PM-3:00PM Wed or by appointment

1. **Course Name: General Physics II**

2. Course Prefix and Number: PHYS 220

3. Course Description: This second semester of a two-semester sequence is an overview of basic concepts and principles of optics, electricity, magnetism, and other topics of modern physics. This course is intended for science majors.

4. Credit hours: 3

5. Prerequisites and Co-requisites: Successful completion of PHYS 210 & 211 with a grade of C or higher.
Co-requisites: Concurrent enrollment in PHYS 221, General Physics II
Learning Outcomes: **6. Text:** *College Physics*
Author: Wilson, Buffa
Publisher: Prentice Hall
6th Edition

You will need:

a) **Textbook**
b) **Calculator TI-30 to TI-86 models will be acceptable.**
c) **Single subject spiral notebook for notes**
d) **Sharp pencil or fine line (.05mm) pen**

8. Learning Outcomes: On completion of this course, the student will be able to:
1. Relate electric charge to atomic structure and describe the forces between charged bodies.
2. State and apply Coulomb's Law
3. Define and calculate an electric field
4. Identify parts of an electric circuit
5. Compare a series and a parallel circuit and calculate equivalent resistance in a circuit
6. State and apply Ohm's Law
7. Describe how electrical energy is calculated
8. State and apply Kirchoff's Rules
9. Define capacitance

10. Calculate the equivalent capacitance and the energy stored by a capacitator
11. Define dielectric, conductors, and insulators
12. State and apply the Biot-Savart Law
13. Describe magnetism and the behavior of magnetic poles
14. Describe the Earth's magnetic field
15. Relate magnetic field and magnetic field lines of force
16. Calculate the magnetic field of solenoids and torpids
17. Calculate the magnetic force of current carrying wires
18. State the relationship between work, energy, EMF, and potential difference
19. State and apply the Lenz's Law and Faraday's Law
20. Apply the lens equation
21. State the Laws of light reflection
22. Define the Index of Refraction of a medium, state, and apply Snell's Law
23. Demonstrate mastery of the terminology pertaining to lenses, rays, images, and magnification
24. State properties of electromagnetic waves and how they are produced
25. Describe the structure and properties of atoms and nuclei
26. Explain Einstein's two basic postulates that are the foundation of the Theory of Relativity
27. Compare and contrast the types and properties of radioactivity
28. Describe the types of nuclear reactions

9. Course Outline

a) Assignments will be made from each chapter. These will include a vocabulary list, review questions and exercises.

b) Approximately 6 projects related to the subject will be assigned during the semester.

c) A final comprehensive exam will be given at the conclusion of the semester.

e) Material will cover classical physics from electromagnetics to quantum theory.

f) Project list:

1. **Create a table for subatomic particles and their properties**
2. **List and describe the fundamental forces**
3. **Biographical sketch of M. Faraday**
4. **Examples of Lenz's law**
5. **Drawings of electric fields from given charge distributions**
6. **Describe and explain the basis for MRI**

10. Evaluation/Assessment Measures:

a. Examinations/quizzes
b. Activities/projects
c. Attendance
Grading System:
Grading Scale (example)

90 – 100 A
80 – 89 B
70 – 79 C
60 – 69 D
0 - 59 F

11. Tentative course schedule for semester (by day or week)

1. **Review of vector algebra**
2. **Review of Newton's Laws and measurement systems**
3. **Review of work- energy theorem, K.E.**
4. **Coulomb's Law**
5. **Electric Field**
6. **The electric Potential**
7. **Capacitance**
8. **Current and resistance**
9. **DC circuits**
10. **Magnetism**
11. **Electromagnetism**
12. **Electromagnetic waves**
13. **AC circuits**
14. **Behavior of light**
15. **Geometrical optics**
16. **Introduction to Quantum theory**
17. **Nuclear Physics nomenclature**

12. College and Classroom Polices

A. Students with Disabilities

The Office of Student Counseling and Disability Services coordinates campus-wide efforts to provide services and accommodations for students with disabilities. In compliance with the American Disabilities Act (ADA), students with documented disabilities who need course accommodations, have emergency medical information or require special arrangements for building evacuation should contact the instructor within the first two weeks of class at the number or office listed above.

B. Attendance

Attendance policies correspond to those listed in the *Delta Academic Catalog*. Class attendance is regarded as an obligation as well as a privilege, and all students are expected to attend regularly and punctually all classes in which they are enrolled. A student shall submit written excuses for all class absences to the appropriate instructor within three class days after the student returns to the respective class. Students are responsible for all class work missed regardless of the reason for the absence.

D. Academic Support Services: Delta provides students with resources and support outside of the classroom through the Library/LRC in Coenen 150 (http://www.ladelta.cc.la.us/library) and a Student Success Center which provides workshops, resources, and tutorial support.

E. Electronic Devices/Other noise-making devices

Cellular telephones, beepers, and other noise-making devices must be turned off during class time. If this policy is not adhered to, you will be asked to leave the room to avoid further interruptions.

F. Safety Regulations
No firearms, weapons, tobacco products, alcoholic beverages, or illegal drugs are permitted in the classroom. In the event you do not adhere to this policy, you will be asked to leave the classroom and expulsion from the college is possible.

C. Academic Integrity
Louisiana Delta Community College upholds standards of academic integrity of its students and faculty. Academic integrity is essential to assure learning through assessment. Students are responsible for being aware of and adhering to academic rules and regulations for the college and classroom as defined in the *Delta Academic Catalog* and *Delta Student Handbook*. Academic dishonesty includes but is not limited to cheating, fabrication, plagiarism, interference, misrepresentation, violation of class rules, and fraud. Identified instances of academic misconduct or dishonesty warrant disciplinary actions by the instructor or college. Please refer to Delta's *Student Handbook* for more information.

LOUISIANA DELTA COMMUNITY COLLEGE
CODE OF STUDENT CONDUCT

All members of the College community are expected to respect the principles of honesty and mutual trust embodied in the honor code. Students are responsible for preparing their own written work in every class unless specifically permitted by the instructor to combine efforts on an assigned project. Students are expected to understand the meaning of plagiarism and to avoid all suspicion of plagiarism in papers prepared. Furthermore, students are expected neither to sanction nor tolerate violation of the honor code by others.

Students will not give or receive any unauthorized aid on any examination or paper. If a student witnesses anyone else doing so, that student must be reported immediately to the faculty member and/or the appropriate College administrator.

ACADEMIC MISCONDUCT

Types of Academic Misconduct (1.01)

Although all academic misconduct is wrong, premeditated acts of academic misconduct represent a greater threat to the integrity of the College than do unpremeditated acts of academic misconduct.

Categories of Academic Misconduct (1.02)

Cheating is the intentional use of inappropriate assistance, information, materials, or study aids in any academic exercise. Cheating includes the use of unauthorized assistance, information, or materials on tests, homework, quizzes, papers, projects, and all other academic assignments. Additionally, students who provide such unauthorized assistance are also guilty of cheating.

Fabrication is defined as altering official college documents, forging signatures of college officials or other individuals, or changing grades and other academic records. Fabrication also includes submitting false records to gain admission to the College. Furthermore, any oral or written misrepresentation of truth in any communication with College administrators, faculty, or staff is also fabrication.

Plagiarism involves submitting another person's ideas, words, data, arguments or sentence structure as the student's own without proper documentation.

Misrepresentation is intentionally presenting oneself as someone else, or intentionally misrepresenting a condition or situation to gain credit or concessions on academic work, including make-up tests, projects, and class assignments.

Violation of class rules is the intentional failure to follow the class policies concerning assignments and behavior.

Other forms of academic misconduct include **complicity,** the willing involvement with others in any academic misconduct; **software fraud,** the unlawful downloading and copying of computer software used in the creation of academic work; and **multiple submissions of work,** handing in academic work that was done previously by the student for another class, or by someone else.

Disciplinary Sanctions for Academic Misconduct (1.03)

Depending on the type of violation, the number of times a student has committed an offense, and the discretion of the instructor, penalties may include any combination of the following:

1. Loss of partial credit for the assignment.
2. Reduced grade for the course.
3. Grade of "F" for the course.
4. Zero assigned to test or assignment.
5. Academic Probation
6. Counseling
7. Academic Suspension
8. Expulsion

Administration of Penalties (1.04)

Instructors assign penalties to the student based on the above criteria. Student appeals of the penalty will be directed to the appropriate Academic Supervisor, or, if necessary, to the Dean of Instruction.

Should the student's violation of the Academic Honesty Policy warrant probation, suspension, or expulsion, the matter will be referred to the **Admissions and Academic Appeals Committee. Appeals of penalties will be directed to the Vice Chancellor of Academic and Student Affairs.**

The complete Academic Misconduct policies and the Due Process Procedure (sections 1.05-1.06) are listed in the Student Handbook.